

15 different GP practices across Ireland who were deemed suitable by their physician to start treatment with SFC (any dose). HRQOL was assessed using the SF-36 before treatment and 12 weeks later following treatment. **RESULTS:** Data was evaluable for 90 patients (71%; asthma, 21%; COPD, 8%; bronchitis or cough). Fifty-four percent of patients were female and 33% were over 60 years of age. At baseline, HRQOL scores for all health attributes for all patients was less than that of the general population. The biggest difference was in the role physical and general health attributes (37 and 24 points respectively). After 12 weeks, SFC had a significant positive impact on most health attributes. The biggest improvements were observed in the role physical, vitality, social functioning and role emotional attributes with an average difference of 15.5, 11.5, 11.1 and 10.9 points respectively (all $p < 0.004$). **CONCLUSION:** This study showed that respiratory diseases have a negative impact on patient's quality of life. However, treatment with SFC resulted in positive improvements in the quality of life of patients with respiratory diseases like asthma and COPD.

PRS15

EQ-5D UTILITIES ASSOCIATED WITH LEVELS OF COPD SEVERITY: A META-ANALYTIC APPROACH

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OBJECTIVES: Chronic obstructive pulmonary disease (COPD) imposes a tremendous economic and humanistic burden on health care systems worldwide. The EQ-5D is a generic measure of health-related quality of life (HRQL) that can help to better understand the impact of COPD. The aim of this study was to estimate EQ-5D index-based utility scores associated with different levels of severity of COPD according to Global initiative of Chronic Obstructive Lung Disease (GOLD) stage. **METHODS:** A structured literature search was conducted in EMBASE and MEDLINE (Jan 1988 to Jan 2007) using keywords relevant to respiratory disease and EQ-5D. Original research studies in COPD that reported EQ-5D summary scores were selected for inclusion. Pooled summary scores for UK-based index were estimated using a fixed-effects estimate for COPD overall and by GOLD stage (Stage I [least severe] to Stage IV [most severe]). **RESULTS:** Of 15 original research studies identified prior to screening, 8 reported EQ-5D index-based summary scores by severity. Utility scores which ranged from 0.52 (SD 0.16) to 0.84 (SD 0.15). Pooled average utility scores (95% CI) by GOLD stage were as follows: stage I = 0.74 (0.62–0.87); stage II = 0.74 (0.66–0.83); stage III = 0.69 (0.60–0.78); and stage IV = 0.61 (0.44–0.77). **CONCLUSION:** Synthesis of the current literature provided evidence that HRQL decreases with severity of COPD. Utilities associated with stage of severity may be useful for modeling outcomes and facilitating quality-adjusted life-year calculations in economic evaluations of COPD.

PRS16

DEVELOPMENT OF PREFERENCE-BASED EQ-5D UTILITY VALUES FOR THE ST GEORGE'S RESPIRATORY QUESTIONNAIRE-CHRONIC OBSTRUCTIVE PULMONARY DISEASE (SGRQ-COPD)

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OBJECTIVES: To model the relationship between St George's Respiratory Questionnaire for Chronic Obstructive Pulmonary

Disease (SGRQ-COPD) and utilities based on EQ-5D so as to estimate preference-based utilities for COPD patients. **METHODS:** Dataset comprised of a one-year clinical study of 845 patients. 559 patients completed all items of the SGRQ-COPD and EQ-5D at baseline. Ordinary least squares regression was used to predict EQ-5D utilities based on responses to SGRQ-COPD. Following identification of significant patient characteristics, significant components and individual items measured in SGRQ-COPD were included using stepwise selection regression with an additive specification to obtain the preferred algorithm to explain EQ-5D utilities. Adjusted R-squared and error of prediction (root mean-squared error: RMSE), were used to judge goodness of fit. The preferred algorithm was validated for predictive ability using end of trial data. **RESULTS:** The preferred algorithm included the following terms (coefficient): constant (+1.0050), symptoms (−0.0006), activity (−0.0019) and impacts (+0.0019) component scores, one activity item—Item 27 'I take a long time to get washed or dressed' (−0.0780), one symptom item—Item 5—'I have had 3 or more attacks of chest trouble in the last year' (−0.0480), and two patient characteristics, smoking history (−0.0160) and gender (+0.0304). Adjusted R-squared was 43.45% and RMSE was 0.1452. In the validation analysis, this algorithm explained 39% of the variation in utilities derived from EQ-5D. The algorithm that excluded items 27 and 5, but included all three components and two patient characteristics, had adjusted R-squared of 41.11% and RMSE of 0.1482. Alternative specifications applying a logistic transformation and Tobit regression did not improve on this model. **CONCLUSION:** The regression model enables utilities to be estimated for study patients with SGRQ-COPD measurements but for whom no preference-based instrument has been administered. The approach appears fairly robust based on the explanatory power of the algorithm and validation results.

PRS17

SELECTION OF UTILITY INSTRUMENTS FOR ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: Agencies such as NICE in the UK have specific requirements for economic evaluations. NICE specify how utility data should be collected and used in such analyses. The present review aimed to: 1) identify which utility measures have been used in asthma and COPD; 2) compare their measurement properties; and 3) determine if they meet NICE requirements. **METHODS:** A literature (Embase, PubMed) and internet (Google, PROQOLID) search for studies including utility measures in asthma and COPD was completed for the last 10 years. It identified 41 and 24 studies respectively. The evidence regarding each measure was critically appraised and summarised in terms of our three criteria. **RESULTS:** Asthma and COPD search generated 41 and 24 hits respectively. The following generic instruments had been used in asthma or COPD studies: EQ-5D, 15D, HUI-2, SF-6D [1]. Disease specific utility measures were also identified: ALQ-5D, Asthma Symptoms Utility Index (ASUI) and the SGRQ-U. The ALQ-5D and the SGRQ-U are derived from the Asthma Quality of life Questionnaire and St Georges Respiratory Questionnaire respectively. The EQ-5D has been most commonly used and one comparison study found it to be more sensitive than the SF-6D. Measurement properties and appropriateness for all measures will be summarised. **CONCLUSION:** Utility measures have been quite widely used in asthma and COPD. EQ-5D, SF-6D, ALQ-5D and HUI-2 would all in principle be suitable for NICE, but EQ-5D is probably the safest

choice. Other decision makers prefer to see patient derived utilities and only the SGRQ-U would meet that requirement.

PRS18

A PROCESS FOR DEVELOPING A PATIENT-CENTERED CONCEPTUAL FRAMEWORK FOR DYSPNEA AND RELATED FUNCTIONAL LIMITATIONS IN COPD

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OBJECTIVES: To establish a conceptual framework that can be used to guide the development of a new measure of patient-reported dyspnea, including its impact upon valued activities. **METHODS:** We identified key concepts through individual interviews with COPD patients (n = 15), reconciliation with scientific literature and expert input (n = 16), and "think aloud" interviews with COPD patients (n = 10). **RESULTS:** Thematic analysis of patient input suggested five components of the dyspnea experience: breathlessness, fatigue, activity modification, activity limitation, and emotional response. Two major influences on dyspnea were described as individual exertion and exposure to environmental factors. Patients acknowledged a sense of dyspnea-related fear, and reported distress over its impact on health and activity limitation. They emphasized coping via behavioral strategies and medication and reported effects of dyspnea on stopping or scaling back activities, taking more time to do things, and using adaptive measures or equipment. No existing model of dyspnea in COPD incorporated all of these concepts elucidated by patients. We therefore used Wilson & Cleary's (1995) general model to develop a dyspnea-specific framework, using expert input and available literature. In this framework, the most proximal of endpoints (dyspnea symptoms) can impair function, and be mediated by personal and environmental factors. **CONCLUSION:** Patient input was systematically used to develop a comprehensive conceptual framework for measurement of dyspnea and related functional limitations.

STROKE—Clinical Outcomes Studies

PST1

SEASONAL VARIATION OF TRANSIENT ISCHEMIC ATTACK (TIA) IN HUNGARY

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OBJECTIVES: The aim of our current study was to find out whether a weekly or seasonal variation can be revealed in the onset of a transient ischemic attack (TIA) in Hungary during a four year study period, and whether the occurrence of a TIA is influenced by age or sex. **METHODS:** The study was performed on patients received treatment at neurological departments in Hungary between 2002 and 2005, and diagnosed with TIA (N = 4898). Data was taken from the nationwide database of the National Health Insurance Fund Administration (OEP), in accordance with the International Classification of Diseases (ICD) (ICD codes G4580, G4590). **RESULTS:** Based on our results, the onset of cerebrovascular diseases, such as a transient ischemic attack (TIA), shows a weekly and seasonal variation. With consideration to seasonal variation, the peak period of TIA is during the months of spring, with lowest number of events during the summer. There was a significant difference in the number of events during seasons ($p < 0.01$). The weekly peak of TIA-morbidity was during the first day of the week, on Monday,

showing a gradually decreasing tendency until Sunday. Differences between sexes were only found in the weekly distribution of number of events. The difference between age-groups proved to be significant only in weekly analysis and the decrease on weekends is significantly higher in patients aged over 65 years ($p < 0.01$). **CONCLUSION:** In summary, the results of our study reveals, that the occurrence of TIA shows a certain variation with consideration to seasons and the days of the week.

STROKE—Cost Studies

PST2

A CRITICAL REVIEW OF PUBLISHED ECONOMIC MODELLING STUDIES IN ISCHAEMIC STROKE

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OBJECTIVES: To review and synthesise the various methods used for cost-effectiveness (CE) modelling evaluating acute ischaemic stroke (AIS) treatment. **METHODS:** A literature search was performed in December 2006 through PubMed using the following search criteria: English language, publication date between 1995 and 2006, "cost-effectiveness" and "stroke" as key words. Only models were selected. They were reviewed according to a predefined reading grid. Structure, inputs and results were studied. **RESULTS:** Twelve models were retrieved, which evaluated thrombolytic agents or more general AIS management. The setting was either Europe, the US or Australia. The perspective was always societal. The general structure was similar between models (Markov model +/- decision tree) with a long-term horizon. States were defined by patients' vital status and disability level. However, some variability was found in the definition of disability (different scales, different thresholds) and in the choice of events to be included in the model (stroke recurrence, hemorrhage, cardiovascular event). Some inputs were comparable between models, namely probability of events and utilities per state. However, disability/mortality probabilities and costs per state were very different according to the country and calendar year. Long-term probabilities were often assumptions. Cost-effectiveness was most often expressed as cost per Quality-of-life Adjusted Life Years (QALY). One-way sensitivity analyses (SA) allowed identifying costs and utilities for dependent patients as drivers. Less often, probabilistic SA were performed in order to assess the robustness of the findings. **CONCLUSION:** The general structure of models evaluating CE of acute phase treatment in AIS seems to be consensual. However, there is a general lack of information on models' drivers. Influence of local AIS evolution data (mortality/disability) after acute phase and impact of disability on long-term outcomes should be tested. Once drivers identified, related robust epidemiological and economic data (notably long-term) should be used as input.

STROKE—Patient Reported Outcomes

PST3

STROKE SURVIVORS' CHANGE IN HEALTH RELATED QUALITY OF LIFE OVER TIME AS MEASURED BY THE STROKE IMPACT SCALE

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OBJECTIVES: The goal of this study was to analyze changes in disease-specific HRQoL over time. **METHODS:** The Stroke Impact Scale (SIS) was administered to 33 first-time stroke survivors discharged home from the hospital at baseline, 3, 6, 9 and